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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,598	12/21/2004	Michael Farber	1454.1585	2636

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EXAMINER

LY, NGHI H

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/518,598	Applicant(s) FARBER ET AL.	
	Examiner Nghi H. Ly	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 and 16-24 is/are rejected.
- 7) ☒ Claim(s) 15 and 25-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/21/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities: A period "." should be added at the end of claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11, 14, 17, 18 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Keskitalo et al (US 6,128,486).

Regarding claim 11, Keskitalo teaches a method for data transmission in a wireless communication system (see fig.4, wireless connections between 102, 104 and 100), comprising: emitting a subscriber data signal assigned to a subscriber from at least two antenna devices using a diversity method (see fig.1, BTS 100 transmits signal to MS 102-108 and column 1, lines 1-12, see fig.4, BTS 100 has at least two antennas, also see column 4, lines 33-45 and column 8, lines 38-43), emitting a reference signal assigned to the subscriber from only one of the at least two antenna devices (see fig.1, BTS 100 transmits signal to MS 102-108), and measuring propagation delay of the reference signal to determine runtime critical system parameters for a positional determination of the subscriber (see column 6, lines 30-45).

Regarding claim 14, Keskitalo teaches the antenna device used to send the reference signal is switched between the at least two antenna devices (column 9, line 35 to column 10, line 10).

Regarding claim 17, Keskitalo teaches the positional determination is performed with a timing advance mechanism (see column 1, lines 46-53 and column 3, lines 63-65).

Regarding claim 18, Keskitalo further teaches the subscriber data signal and the reference signal are transmitted using a time division multiple access method (see column 1, lines 13-23 and column 1, lines 49-56).

Regarding claim 21, Keskitalo further teaches the reference signal is selected from a plurality of manufacturer-specific reference signals, and the manufacturer-specific reference signals are stored on a transmit side in a table (Abstract , see “select the signals”, the teaching of Keskitalo inherently teaches manufacturer-specific reference signals).

Regarding claim 22, Keskitalo further teaches the at least two antenna devices have polarizations orthogonal to one another (see fig.4 and column 1, lines 35-46).

Regarding claim 23, Keskitalo further teaches the at least two antenna devices have the same polarization, but are at a fixed distance from one another (see fig.4, box RF 304 with antennas).

Regarding claim 24, Keskitalo further teaches the antenna device used to send the reference signal is switched between the at least two antenna devices (column 9, line 35 to column 10, line 10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keskitalo et al (US 6,128,486) in view of Cedervall et al (US 6,011,974).

Regarding claim 12, Keskitalo teaches the method according to Claim 11. Keskitalo does not specifically disclose the reference signal is emitted periodically at predefined time intervals.

Cedervall teaches the reference signal is emitted periodically at predefined time intervals (see column 11, lines 32-38 and column 12, lines 14-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Cedervall into the system of Keskitalo in order to provide an improved method and system for determining the position of a mobile radio terminal (see Cedervall, column 1, lines 5-10).

Regarding claim 13, Keskitalo teaches the method according to Claim 11. Keskitalo does not specifically disclose the reference signal is emitted a periodically at time intervals selected at random.

Cedervall teaches the reference signal is emitted aperiodically at time intervals selected at random (see column 11, lines 32-38 and column 12, lines 14-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Cedervall into the system of Keskitalo in order to provide an improved method and system for determining the position of a mobile radio terminal (see Cedervall, column 1, lines 5-10).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keskitalo et al (US 6,128,486) in view of Ylitalo et al (US 6,788,661).

Regarding claim 16, Keskitalo teaches the method according to Claim 11. Keskitalo does not specifically the antenna device used to send the reference signal is switched, a comparison is made, and for future propagation delay measurements, the antenna device most closely within line-of-sight of the subscriber is selected.

Ylitalo teaches the antenna device used to send the reference signal is switched, a comparison is made, and for future propagation delay measurements, the antenna

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device most closely within line-of-sight of the subscriber is selected (see column 13, lines 3-12 and column 8, lines 5-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Ylitalo into the system of Keskitalo in order to improve the spectral efficiency of transmissions from the base station (see Ylitalo, column 3, lines 8-10).

8. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keskitalo et al (US 6,128,486) in view of Wesby et al (US 6,847,826).

Regarding claim 19, Keskitalo teaches the method according to Claim 11. Keskitalo does not specifically disclose the reference signal is a training sequence transmitted in a time slot used for synchronization.

Wesby teaches the reference signal is a training sequence transmitted in a time slot used for synchronization (see column 3, lines 4-9 and column 9, lines 30-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Westby into the system of Keskitalo in order to perform the actual calculation of a mobile station's location (see Westby, column 9, lines 33-35).

Regarding claim 20, Keskitalo teaches the method according to Claim 11. Keskitalo does not specifically disclose the wireless communication system is a GSM mobile radio system, and an extended training sequence of a synchronization time slot is used as the reference signal.

Westby teaches the wireless communication system is a GSM mobile radio system, and an extended training sequence of a synchronization time slot is used as the reference signal (see column 1, lines 48-53 and column 3, lines 30-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Westby into the system of Keskitalo in order to perform the actual calculation of a mobile station's location (see Westby, column 9, lines 33-35).

Allowable Subject Matter

9. Claims 15 and 25-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 15, Keskitalo teaches the method according to claim 11. Keskitalo fails to teach when the antenna device used to send the reference signal is switched, the propagation delay is compared for the at least two antenna devices, and for future propagation delay measurements, the antenna device used to send the reference signal is selected to be the antenna device associated the smaller propagation delay.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- a. Beckner (US 5,952,954) teaches ground penetrating radar with synthesized end-fire array.
- b. Evans (US 6,757,267) teaches antenna diversity system.
- c. Khayrallah (US 6,198,775) teaches transmit diversity method system and terminals using scramble coding.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571) 272-7911. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

NH Ly
08/02/05


CHARLES APPIAH
PRIMARY EXAMINER